

**WHAT IS CLAIMED IS:**

- 1           1.       A system for providing graphical and analytical dynamic modeling of a multi-  
2       dimensional mechanical mechanism, said system comprising:  
3                   at least one processor for computing a dynamic simulation of movement of the multi-  
4       dimensional mechanical mechanism, and rendering the multi-dimensional mechanical mechanism, the  
5       dynamic simulation simultaneously performing kinematic and tolerance modeling; and  
6                   a display for displaying the rendered multi-dimensional mechanical mechanism during  
7       the dynamic simulation.